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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,258	06/22/2005	Takashi Akita	2005_0968A	8720

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EXAMINER	
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ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,258	AKITA ET AL.	
	Examiner	Art Unit	
	SUDHANSHU C. PATHAK	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,9,11-13,19,21-23 and 29* is/are rejected.

7)☒ Claim(s) *4-8,10,14-18,20 and 24-28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 June 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-29 are pending in the application.

Drawings

2. Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "**Replacement Sheet**" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified. The Applicant has submitted Figure(s) 25-26 twice on 06/22/2005 wherein one set of the figures are labeled as "Prior Art", it is recommended that these set of figures be annotated as "**Replacement Sheet**"

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 (system) & 11 (method) & 21 (device) are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (AAPA) in view of Davis et al. (4,354,229).

In regards to Claims 1, 11 & 21, the AAPA discloses a data transmission system including a plurality of data transmission devices connected via a transmission line so as to form a ring structure, for performing unidirectional electrical communication

after each of the data transmission devices establishes clock synchronization (Fig. 25 & Specification, Page 1, lines 1-12 & Page 3, lines 2-13 & Page 4, lines 13-23 & Page 5, lines 1-21 & Fig. 26), wherein, each of the data transmission devices includes: a processing section for processing data received and to be transmitted based on a predetermined communications protocol (Specification, Page 2, lines 1-12 & Page 3, lines 5-22) {Interpretation: The reference discloses a MOST protocol for communication between devices for processing data received and to be transmitted}; a transmission/reception section for outputting data received from a previous data transmission device to the processing section and transmitting a processing result from the processing section to a subsequent data transmission device (Fig. 25, elements 130a-n & Specification, Page 3, lines 5-24); a control section for setting the device as a master, which sends a signal synchronizing with a held reference clock to the subsequent data transmission device, or as a slave, which establishes clock synchronization using a signal received from the previous data transmission device and sends a signal to the subsequent data transmission device (Fig. 26 & Specification, Page 3, lines 5-24 & Page 4, lines 13-25 & Page 5, lines 1-19); lock signal sending means for sending a lock signal in an initial operation (Fig. 26, element “LS” & Specification, Page 5, lines 1-19); clock synchronization means for receiving the lock signal sent by the previous data transmission device and establishing the clock synchronization (Fig. 26, element “Clock Recovery” & Specification, Page 5, lines 1-19); start signal sending means for sending a start signal that indicates a data communication start timing (Fig. 26, element “TS” &

Specification, Page 5, lines 20-25 & Page 6, lines 1-15); start signal commencement timing generation means for, when the device is set as the master, outputting to the start signal sending means a start signal sending commencement signal indicating a timing at which to send the start signal, after a predetermined time period elapses after the lock signal sending means sends the lock signal(Specification, Page 5, lines 15-25 & Page 6, lines 1-15); and a signal detection section for detecting whether a signal has been received from the previous data transmission device (Specification, Page 5, lines 1-11) {Interpretation: The reference discloses receiving a lock signal "LS" and after performing clock synchronization transmits lock signal to the next downstream slave device, thus detecting of the lock signal is inherent}, the lock signal sending means when the device is set as the master, sends to the subsequent data transmission device the lock signal synchronizing with the held reference clock, and when the device is set as the slave, receives the lock signal sent by the previous data transmission device and establishes clock synchronization, and, after establishing the clock synchronization, sends the lock signal further to the subsequent data transmission device (Specification, Page 4, line 24-to-Page 5, line19 & Fig. 26), and the start signal sending means when the device is set as the master, receives the start signal sending commencement signal from the start signal commencement timing generation means and thereafter sends the start signal to the subsequent data transmission device, and when the device is set as the slave, sends the start signal to the subsequent data transmission device in response to reception of the start signal sent from the previous data transmission

device, whereby each of the data transmission devices performs initialization (Specification, Page 5, line 20-to-Page 6, lines 15).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-3, 9 (system) & 12-13, 19 (method) & 22-23 (device) are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (AAPA) in view of Davis et al. (4,354,229).

In regards to Claims 2, 12 & 22, the AAPA discloses a data transmission system including a plurality of data transmission devices connected via a transmission line so as to form a ring structure, for performing unidirectional electrical communication after each of the data transmission devices establishes clock synchronization as described above. However, the AAPA does not disclose the control section sets the device as a master or a slave based on a presence or absence of a signal detection in the signal detection section, whereby, when there is a portion where the electrical communication is impossible, a data transmission device located most upstream in the electrical communication from the portion is set as the master.

Davis discloses setting the device as a master or a slave based on a presence or absence of a signal detection in the signal detection section, whereby, when there is a portion where the electrical communication is impossible, a data transmission

device located most upstream in the electrical communication from the portion is set as the master (Abstract, lines 1-20 & Column 3, lines 3-6 & Fig.'s 1, 9-10 & Column 30, lines 1-67) {Interpretation: The reference discloses selecting a temporary master device base on loss of synchronization based on fault location wherein the selected master device is set as the device that detects the loss of synchronization which is equivalent to selection of the master device as recited in the instant claim}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Davis teaches setting the device as a master or a slave based on a presence or absence of a signal detection in the signal detection section, whereby, when there is a portion where the electrical communication is impossible, a data transmission device located most upstream in the electrical communication from the portion is set as the master and this is implemented in the system as described in the AAPA so as to be able to detect the fault in the loop and further so as to provide improved reliability and availability of the devices in a system comprising a fault.

In regards to Claims 3, 13 & 23, the AAPA in view of Davis discloses a data transmission system including a plurality of data transmission devices connected via a transmission line so as to form a ring structure, for performing unidirectional electrical communication after each of the data transmission devices establishes clock synchronization as described above. However, the AAPA does not disclose the control section when the device is set as the master in the initial operation, causes the lock signal sending means to send the lock signal and, after recognizing that the signal detection section has not detected a signal from the previous data

transmission device within a predetermined time period, sets the device as a slave if the signal detection section of the device detects a signal from the previous data transmission device and sets the device as a master if the signal detection section of the device does not detect a signal from the previous data transmission device, and when the device is set as the slave in the initial operation, sets the device as a slave if the signal detection section of the device detects a signal from the previous data transmission device and sets the device as a master if the signal detection section of the device does not detect a signal from the previous data transmission device (Abstract, lines 1-20 & Fig.'s 9-10 & Column 3, lines 3-20 & Column 30, lines 5-68) {Interpretation: The reference discloses each of the devices in a loop network can be set as master and / or slaves wherein the temporary master device is selected from any of the devices in the loop wherein the temporary device is selected based on the device that detects the loss of synchronization either it is initially a slave device or master device}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA in view of Davis satisfies the limitations of the claim.

In regards to Claims 9, 19 & 29, the AAPA in view of Davis discloses a data transmission system including a plurality of data transmission devices connected via a transmission line so as to form a ring structure, for performing unidirectional electrical communication after each of the data transmission devices establishes clock synchronization as described above. The AAPA further discloses the communications protocol used by the processing section is defined by MOST (Media

Oriented Systems Transport) (Specification, Page 2, lines 1-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA in view of Davis satisfies the limitations of the claim.

Allowable Subject Matter

7. Claims 4-8, 10 (system) & 14-18, 20 (method) & 24-28 (device) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUDHANSHU C. PATHAK whose telephone number is (571)272-5509. The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on 571-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sudhanshu C Pathak/
Primary Examiner, Art Unit 2611